



$$\langle J| = |J\rangle^\dagger = \begin{pmatrix} J_x^* & J_y^* \end{pmatrix} \quad |J\rangle = \begin{pmatrix} J_x \\ J_y \end{pmatrix}$$

$$\begin{aligned} I &= |\langle J|\mathbf{SLM}|J\rangle|^2 \\ &= \left| \begin{pmatrix} J_x & J_y \end{pmatrix} \begin{pmatrix} X + iY & Z + iW \\ -Z + iW & X - iY \end{pmatrix} \begin{pmatrix} J_x \\ J_y \end{pmatrix} \right|^2 \end{aligned}$$